



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Dairy
Division**

United States Scorched Particle Standards for Dry Milk

Effective January 26, 1951

United States Scorched Particle Standards for Dry Milk

§ 58.2676 *United States scorched particle standards for dry milks.*

The standards contained in this subpart consist of four (4) discs, each of which represents one of the following:

- 7.5 mg. of scorched particles.
- 15.0 mg. of scorched particles.
- 22.5 mg. of scorched particles.
- 32.5 mg. of scorched particles.

§ 58.2677 *Preparation of discs.*

Each of the four (4) discs was prepared in accordance with the procedure set forth in this section.

(a) Spread five grams of nonfat dry milk solids evenly over a petri dish and heat at 119°C. for four hours to produce scorched particles.

(b) After heating, keep in desiccator until the particles are weighed.

(c) Prepare scorched particle solution by mixing 0.50 gram of the scorched particles (prepared in accordance with paragraph (a) of this section) gently with approximately 20 ml. of a 50 percent filtered sucrose solution. Transfer the mixture to a 200 ml. volumetric flask and dilute to volume using a 50 percent filtered sucrose solution and mix thoroughly.

(d) To provide particles which, in appearance, are similar to highly scorched, or burned, protein particles, prepare at least 1.0 gram of a charcoal mixture by using the following specified percentages of charcoal of the designated meshes:

- 200 mesh charcoal: 20 percent.
- 150 mesh charcoal: 50 percent.
- 100 mesh charcoal: 20 percent.
- 65 mesh charcoal: 10 percent.

(e) Prepare charcoal solution by placing 1.0 gram of the charcoal mixture (prepared in accordance with paragraph (d) of this section) in a one-liter volumetric flask and dilute to volume, using a 50 percent filtered sucrose solution and mix thoroughly.

(f) Prepare each of the following sample solutions:

(1) *Sample solution 1.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 7.425 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.075 mg. The particle content of this sample solution is 7.5 mg.

(2) *Sample solution 2.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 14.85 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.15 mg. The particle content of this sample solution is 15.0 mg.

(3) *Sample solution 3.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 22.2 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.30 mg. The particle content of this sample solution is 22.5 mg.

(4) *Sample solution 4.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 31.9 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.60 mg. The particle content of this sample solution is 32.5 mg.

(g) Stir each sample solution immediately prior to filtering and filter through a standard lintine disc (1¼" diameter) using a filtering surface of 1⅛" diameter. Rinse the container of each sample solution with filtered, reconstituted, spray process nonfat dry milk solids and filter the rinse through the applicable disc.

(h) Dry the discs at room temperature.

§ 58.2678 *General.*

To facilitate the use and availability of these scorched particle standards, a composite photograph of the four (4) discs is made a part hereof; and a copy of the photograph may be obtained, upon request, from the Poultry and Dairy Quality Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC 20250.